Model CCSO-914X-1000 is a 1 GHz SAW (surface acoustic wave) Clock Oscillator (CCSO). SAW crystal technology provides low-noise and low-jitter performance with true sinewave output. Features include -146dBc/Hz phase noise at 10 kHz offset, 5V input voltage, -40°C to +85°C operating temperature, FR5 PCB and 9×14 mm SMT package. The oscillator has no sub-harmonic and the second harmonic is typically -20dBc.

Applications include:
System Clock for Network Clock Generator/Synchronizer, Clock for DDS, Test and Measurement, Avionics, Point-to-Point Radios, and Multi-point Radios.
CCSO-914X-1000
True SineWave
SAW Based Clock Oscillator
9×14mm SMD
5 Volt

Frequency: 1 GHz
Temperature Range: -40°C to +85°C
Storage: -45°C to 90°C
Input Voltage: 5.0V ± 0.25V

Frequency vs Temperature: ±150ppm Typical
Input Current: 25mA Typical, 35mA Max
Output: True SineWave
Output Power: +8dBm Min into 50 Ω Load
Start-Up Time: 2ms Typical, 10ms Max
2nd Harmonic: -20dBc Typical, -15dBc Max
Sub-Harmonics: None
Jitter: See Plot on page 1

Phase Noise Typical: See Plot on page 1

G-sensitivity: 0.9×10⁻⁹ per g

### Package Height Options

<table>
<thead>
<tr>
<th>Pad</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/C</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>Output</td>
</tr>
<tr>
<td>4</td>
<td>Vdd</td>
</tr>
</tbody>
</table>

### SUGGESTED PAD LAYOUT

PAD FINISH: Immersion Gold (ENIG); 5 micro inches maximum

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See Table A
CCSO-914X-1000
True SineWave
SAW Based Clock Oscillator
9×14mm SMD
5 Volt

Crystek Part Number Guide

<table>
<thead>
<tr>
<th>CCSO - 914X L - 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 Crystek Saw Oscillator</td>
</tr>
<tr>
<td>#2 Model 914X with -40/85°C Temperature Range</td>
</tr>
<tr>
<td>#3 Height (L = 0.135”) (Blank = 0.210”)</td>
</tr>
</tbody>
</table>

RECOMMENDED REFLOW SOLDERING PROFILE

- **217°C**
- **200°C**
- **150°C**

**Ramp-Up**
- 3°C/Sec Max.

**Preheat**
- 180 Secs. Max.
- 8 Minutes Max.

**260°C for 10 Secs. Max.**

**Critical Temperature Zone**
- Ramp-Down
- 6°C/Sec.
- 90 Secs. Max.

**NOTE:** Reflow Profile with 240°C peak also acceptable.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Vibration</td>
<td>MIL-STD-883, Method 2007, Condition A</td>
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<tr>
<td>Solderability</td>
<td>MIL-STD-883, Method 2003</td>
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<tr>
<td>Solvent Resistance</td>
<td>MIL-STD-202, Method 215</td>
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<tr>
<td>Resistance to Soldering Heat</td>
<td>MIL-STD-202, Method 210, Condition I or J</td>
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<tr>
<td>Thermal Shock</td>
<td>MIL-STD-883, Method 1011, Condition A</td>
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<tr>
<td>Moisture Resistance</td>
<td>MIL-STD-883, Method 1004</td>
</tr>
</tbody>
</table>

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